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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,009	03/02/2004	Naoyuki Misaka	016907-1608	3557
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FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			EXAMINER PARK, EDWARD	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/790,009

Applicant(s)

MISAKA ET AL.

Examiner

Edward Park

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 13 and 14 is/are rejected.
- 7) ☒ Claim(s) 10-12 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/2/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1, 7, 13, 14** are rejected under 35 U.S.C. 102(b) as being anticipated by Nakai et al (US 6,094,281).

Regarding **claim 1**, Nakai teaches an image input apparatus that inputs an image of an original, comprising:

photoelectric conversion means including a first line sensor (Nakai: fig. 14, numeral 121a-c) and a second line sensor (Nakai: fig. 14, numeral 121d), the first line sensor being

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composed of a plurality of line sensors having different color filters on light receiving surfaces thereof (Nakai: fig. 14, numeral 121a-c), and the second line sensor having no color filter (Nakai: fig. 14, numeral 121d) on a light receiving surface thereof (Nakai: fig. 14); and

correction means for correcting output signals from the plural line sensors of the first line sensor of the photoelectric conversion means, using an output signal from the second line sensor of the photoelectric conversion means (Nakai: fig. 19, numeral 1164, 1165).

Regarding **claim 7**, Nakai teaches an image input apparatus that inputs an image of an original, comprising:

photoelectric conversion means including a first line sensor and a second line sensor, the first line sensor being composed of a plurality of line sensors having different color filters on light receiving surfaces thereof (Nakai: fig. 14, numeral 121a-c), and the second line sensor having no color filter (Nakai: fig. 14, numeral 121d) on a light receiving surface thereof (Nakai: fig. 14);

image region discrimination means for discriminating an image region of each of output signals from the plural line sensors that constitute the first line sensor, and outputs discrimination information (Nakai: col. 3, lines 1-11); and

correction means for correcting, on the basis of the discrimination information from the image region discrimination means, the output signals from the plural line sensors of the first line sensor of the photoelectric conversion means, using an output signal from the second line sensor of the photoelectric conversion means (Nakai: col. 3, lines 1-11).

Regarding **claim 13**, Nakai teaches an image processing method for an image input apparatus that inputs an image of an original, comprising:

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scanning the original (Nakai: figure 11, numeral 204) using photoelectric conversion means including a first line sensor and a second line sensor, the first line sensor being composed of a plurality of line sensors having different color filters on light receiving surfaces thereof (Nakai: fig. 14, numeral 121a-c), and the second line sensor having no color filter (Nakai: fig. 14, numeral 121d) on a light receiving surface thereof (Nakai: fig. 14); and

correcting output signals from the plural line sensors of the first line sensor, using an output signal that is produced from the second line sensor of the photoelectric conversion means (Nakai: fig. 14) by the scanning of the original (Nakai: figure 11, numeral 204).

Regarding **claim 14**, Nakai teaches discriminating an image region of each of output signals from the plural line sensors that constitute the first line sensor of the photoelectric conversion means (Nakai: figure 19, numeral 1164), and outputs discrimination information; and correcting, on the basis of the discrimination information, the output signals from the plural line sensors of the first line sensor of the photoelectric conversion means, using an output signal from the second line sensor of the photoelectric conversion means (Nakai: figure 19, numeral 1164).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. **Claims 2-6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakai et al (US 6,094,281) in view of Sharman et al (US 5,045,932).

Regarding **claim 2**, Nakai discloses all elements as mentioned above in claim 1. Nakai further teaches wherein the photoelectric conversion means is configured such that the first line sensor is composed of a RED line sensor having a RED color filter, a GREEN line sensor having a GREEN color filter and a BLUE line sensor having a BLUE color filter (Nakai: fig. 14, numerals 121a-d, 122a-d). Nakai does not teach the size of each of photodiodes, which constitute each of the RED line sensor, GREEN line sensor and BLUE line sensor, is greater than a size of each of photodiodes, which constitute the second line sensor.

Sharman teaches the size of each of photodiodes, which constitute each of the RED line sensor, GREEN line sensor and BLUE line sensor, is greater than a size of each of photodiodes, which constitute the second line sensor (Sharman: fig. 1, numeral 30).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Nakai reference to utilize photodiodes that have larger size photodiodes than the second line sensor as suggested by Sharman, to allow a "high definition output signal ... by combining high definition detail with the low resolution color signals" (Sharman: col. 2, lines 23-36).

Regarding **claim 3**, Nakai discloses all elements as mentioned above in claim 1. Nakai does not teach wherein in the photoelectric conversion means the second line sensor has a higher resolution than each of the line sensors that constitute the first line sensor.

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Sharman teaches wherein in the photoelectric conversion means the second line sensor has a higher resolution than each of the line sensors that constitute the first line sensor (Sharman: fig. 1, numeral 30).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Nakai reference to utilize a second line sensor having higher resolution than the first line sensors as suggested by Sharman, to allow a “high definition output signal ... by combining high definition detail with the low resolution color signals” (Sharman: col. 2, lines 23-36).

Regarding **claim 4**, Nakai discloses all elements as mentioned above in claim 1. Nakai does not teach wherein the correction means performs correction by executing a resolution-enhancing process for each of output signals from the plural line sensors that constitute the first line sensor, using the output signal from the second line sensor.

Sharman teaches wherein the correction means performs correction by executing a resolution-enhancing process for each of output signals from the plural line sensors that constitute the first line sensor, using the output signal from the second line sensor (Sharman: figure 1, numeral 62).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Nakai reference to utilize a resolution-enhancing process with the first line sensor using the output signal from the second lines sensor as suggested by Sharman, to allow a “high definition output signal ... by combining high definition detail with the low resolution color signals” (Sharman: col. 2, lines 23-36).

Regarding **claim 5**, Nakai discloses all elements as mentioned above in claim 1. Nakai does not teach wherein the correction means performs correction by executing a resolution-enhancing process for each of output signals from the plural line sensors that constitute the first line sensor, using the output signal from the second line sensor.

Sharman teaches wherein the correction means performs correction by executing a resolution-enhancing process for each of output signals from the plural line sensors that constitute the first line sensor, using the output signal from the second line sensor (Sharman: figure 1, numeral 62).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Nakai reference to utilize a resolution-enhancing process with the first line sensor using the output signal from the second lines sensor as suggested by Sharman, to allow a “high definition output signal ... by combining high definition detail with the low resolution color signals” (Sharman: col. 2, lines 23-36).

Regarding **claim 6**, Nakai discloses all elements as mentioned above in claim 1. Nakai does not teach wherein the correction means executes a resolution-enhancing process for each of output signals from the plural line sensors that constitute the first line sensor, using the output signal from the second line sensor, and outputs each of the output signals that are subjected to the resolution-enhancing process.

Sharman teaches wherein the correction means executes a resolution-enhancing process for each of output signals from the plural line sensors that constitute the first line sensor, using the output signal from the second line sensor, and outputs each of the output signals that are subjected to the resolution-enhancing process (Sharman: figure 1, numeral 62).

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It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Nakai reference to utilize a resolution-enhancing process with the first line sensor using the output signal from the second lines sensor as suggested by Sharman, to allow a “high definition output signal ... by combining high definition detail with the low resolution color signals” (Sharman: col. 2, lines 23-36).

6. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakai et al (US 6,094,281) in view of Sasanuma et al (US 6,201,616 B1).

Regarding **claim 8**, Nakai discloses all elements as mentioned above in claim 7. Nakai further teaches a photoelectric conversion means configured such that the first line sensor is composed of a RED line sensor having a RED color filter (Nakai: figure 14, numerals 121a, 122a), a GREEN line sensor having a GREEN color filter (Nakai: figure 14, numerals 121b, 122b) and a BLUE line sensor having a BLUE color filter (Nakai: figure 14, numerals 121c, 122c).

Nakai does not teach the size of each of photodiodes, which constitute each of the RED line sensor, GREEN line sensor and BLUE line sensor, is equal to a size of each of photodiodes, which constitute the second line sensor.

Sasanuma teaches the size of each of photodiodes, which constitute each of the RED line sensor, GREEN line sensor and BLUE line sensor, is equal to a size of each of photodiodes, which constitute the second line sensor (Sasanuma: figure 6a, 6b).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Nakai reference to utilize same size of photodiodes as suggested by Sasanuma, to ensure uniformity of the image that is captured by the sensor.

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7. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakai et al (US 6,094,281) in view of Kawai (US 6,859,637 B2).

Regarding **claim 9**, Nakai discloses all elements as mentioned above in claim 7. Nakai does not teach wherein the image region discrimination means discriminates a position of a black part such as a black character or a black line of each of the output signals from the plural line sensors of the first line sensor, and outputs discrimination information.

Kawai teaches wherein the image region discrimination means discriminates a position of a black part such as a black character or a black line of each of the output signals from the plural line sensors of the first line sensor, and outputs discrimination information (Kawai: figure 5, numeral 106).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Nakai reference to utilize a discrimination component as suggested by Kawai, to “[determine] a gradation of the shading corrected data and output a signal to the control the image reading apparatus” (Kawai: col. 12, lines 16-28).

Allowable Subject Matter

8. **Claims 10-12** objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding **claim 10**, Nakai teaches correction means performs correction by executing, on the basis of the discrimination information from the image region discrimination means.

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Regarding **claim 11**, Nakai teaches correction means executes, on the basis of the discrimination information from the image region discrimination means.

Regarding **claim 12**, correction means executes, on the basis of the discrimination information from the image region discrimination means.

None of the references of record alone or in combination suggest or fairly teach the black character substitution process utilizing the output second line sensor to modify the first line sensor, which is required in claims 10-12.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward Park whose telephone number is (571) 270-1576. The examiner can normally be reached on M-F 09:00-17:00, (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on (571) 272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Edward Park
Examiner
Art Unit 2609



BRIAN WERNER
SUPERVISORY PATENT EXAMINER

